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A study on awareness and attitude of teachers on epilepsy in Istanbul

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KEYWORDS
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Summary Epilepsy is a disease frequently seen among school children. Children having seizures may bother their teachers, who do not receive specific training about epilepsy during their education. Moreover, teachers feel desperate not knowing how to handle the situation. In a series of seminars it was our aim both to investigate and to improve the present awareness, knowledge, and attitude of elementary school teachers about epilepsy in Istanbul. In the pre- and post-seminar tests teachers who attended the seminar on a voluntary basis, were asked 29 questions. There were 346 male and female participants aged (mean ± S.D.) 32.19 ± 7.25. 69.3% of the participating teachers had either read or heard about epilepsy, while 71.9% had seen someone having a seizure and 59.4% knew someone with epilepsy.

Although they had some prior misconceptions, like considering epilepsy a contagious (2.3%) or a psychological disease (17.8%), the teachers' knowledge and awareness improved after the seminar due to their special interest in the subject.

Consequently, their negative attitude toward the participation of people with epilepsy in sports and social activities diminished post seminar. However, it should be noted that further education not only of teachers but also of family members is always required.

Introduction

Epilepsy is the most common neurological problem in childhood. Not only the disease itself, but also the drugs used may lead to certain cognitive, psychosocial, and behavioral problems.[1]

The perception of epilepsy in societies may differ depending on the level of education and cultural background of the society. People might associate epilepsy with supernatural causes,[2] contamination,[2,3] etc. As the level of education and income increase, attitude toward epilepsy improves in the society. For instance, the percentages of people who have either read or heard about epilepsy were found to be 97% in Denmark,[4] 95%

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in USA,[5] and 73% in Italy.[6] The percentages, however, might be higher than the general public when the survey is conducted among school teachers who constitute the better educated strata of the society. Thus, in studies carried out in Brazil and Thailand the rates of awareness about epilepsy among school teachers were found to be 98—100 and 57.8%, respectively.[7,8]

The objective of this study is to investigate the present attitude and awareness of elementary school teachers about epilepsy and the degree of benefit they get following a seminar on this topic.

Method

As an activity of the Committee of Education of the Turkish League Against Epilepsy, all primary schools in the city of Istanbul were informed about a series of seminars on epilepsy that was to be held in cooperation with the University of Istanbul and Ministry of Education. One member (CG) of the committee delivered four lectures in years 2000 and 2001. There were 396 teachers attending the meeting and 346 among them responded to the same questionnaire given both before and after the seminars. Seminars involved lectures about the nature of epilepsy, its causes and consequences, its social, professional and legal aspects as well as training about the attitude toward students with epilepsy and their management during seizures. Video displays of common types of epileptic seizures were presented for this purpose. The questionnaire included 29 questions on four topics concerning (a) *awareness and knowledge*, (b) *attitude*, (c) *management of epilepsy*, and (d) *employment, driving, and social activities*.

Statistical analysis

A committee, which consisted of two neurologists, a teacher and a statistician, worked together to determine the content validity of the questionnaire. Before starting the survey, a pilot study was performed. The questionnaire was given to 15 teachers to test the feasibility of the questionnaire. Internal consistency was tested by Cronbach's alpha (α), which was found to be 0.76 as the measure of reliability.[9]

In order to analyze the categorical data Chi-square test of homogeneity was used to test the homogeneity of the group with respect to gender, marital status and number of children they had. McNemar's test was also used to compare the pre- and post-seminar test results for the appropriate items.[10]

Values with $P < 0.05$ was considered to be significant.

The statistical package SPSS (version 10.0) was used for all statistical analyses (Tables 2 and 3).

Results

The demographic features of the participating teachers are given in Table 1. There were 346 male ($n = 62$) and female ($n = 285$) participants aged (mean $\pm$ S.D.) 32.19 ± 7.25. 189 of them were married, 160 had children. All participants were college or university graduates. Each was a representative of a public or a private elementary school in Istanbul or from the suburbs of the city. The teachers were selected from the volunteers by the school administrators.

Awareness and knowledge

Only 69.3% of the participating teachers had either read or heard about epilepsy, whereas 71.9% had seen someone having a seizure and 59.4% knew someone with epilepsy.

The pre-seminar results revealed an unexpectedly high ratio of agreement on epilepsy's being a treatable disease (80.4%) ($P < 0.0001$) and awareness of minor seizures (86.9%) ($P < 0.0001$). However, 39.1% of participants thought that all epileptics had similar clinical symptoms and 17.8% referred to epilepsy as a psychological disease. Incidences of those latter responses decreased significantly to 6.5% ($P < 0.0001$) and to 7% ($P < 0.0001$), respectively, in the post-seminar test. While 97.6% of the responders thought that epilepsy was not a contagious disease in the pre-seminar test, only

Table 1 Demographic features of teachers.

	Number (%)
Sex	
Female	284 (82.1)
Male	62 (17.9)
Marital status	
Married	189 (54.5)
Single	145 (41.8)
Divorced	12 (3.7)
Number of children	
No child	186 (53.7)
One child	89 (25.7)
Two children	62 (17.9)
More than two	9 (2.6)

0.5% persisted that epilepsy was contagious in both the pre- and the post-seminar tests (Table 2).

In the pre-seminar test asthma, cardiovascular disease and epilepsy were considered to be equally severe diseases whereas in the post-seminar test this opinion was relatively changed into evaluating none of these diseases as severe (Table 3).

Attitude

Majority of the teachers approved of people with epilepsy getting married (90.2%) and having children (82.5%). The percentage of the positive responses to these questions increased ($P < 0.005$, $P < 0.001$, respectively) after the seminar.

Although the participants were less hesitant about marrying a person with epilepsy themselves (pre-seminar 59.1%, post-seminar 77.4%) ($P < 0.0001$), they seemed less willing to approve of their children's marrying a person with epilepsy (pre-seminar 26.2%, post-seminar 24.4%) ($P > 0.05$). Considering their being married with children or not, it was noteworthy that 56.7% of those who gave a negative response to the latter question had no children ($P > 0.05$), and the teachers with children all gave affirmative responses (Table 2).

The percentage of the teachers who would not hide it if they had epilepsy increased from 77.8 to 93%, which was a significant improvement (Table 3). When evaluated according to marital status, it was seen that 80.9% of the married teachers responded to this question positively before the seminar ($P < 0.05$).

In Attitude Toward Epilepsy section there was a significantly improvement in the positive answers given to questions 'Would you marry a person with epilepsy?' ($P < 0.0001$) and 'Would you offer a job to a person with epilepsy, if you were a boss?' ($P < 0.0001$) in the post-seminar. Moreover, there was a significant difference between female and male responses to these questions in the post-seminar test ($P < 0.0001$ for female, $P < 0.005$ for male and $P < 0.0001$ for female, $P < 0.01$ for male, respectively), the percentage of positive responses of females being generally higher than male ones.

Results yielding participants' attitudes toward epileptics were exceptionally positive in the majority of the issues questioned. Hardly had anyone prejudices about letting their children play with children who have epilepsy (93.7%) as well as having an employee with epilepsy (86.3%) or colleague (98.8%) before the seminar. When evaluated with respect to marital status, a statistically insignificant percent of teachers who said they would not let their children play with children who have epilepsy had, interestingly, either no or one child and in the post-seminar test the percentage decreased relatively.

There was almost no difference between pre- and post-seminar tests concerning the possibility of people with epilepsy living alone. According to marital status, 60.7% of the married teachers replied negatively ($P < 0.005$) but after the seminar their opinions changed (Table 2).

Management of epilepsy

There was a considerable improvement in the awareness of the teachers concerning epileptic seizures and their management after the seminar. Incorrect measures of management, such as presenting eau de cologne or onion for the patient to smell or holding the extremities of the patient to end the seizures, were favored by 19.7 and 28.8% of the participants, respectively, in the pre-seminar test; fortunately, they were reduced to 1.2% ($P < 0.0001$) and 4% ($P < 0.0001$) after the seminar.

While 33.3% of the participants knew that some people with epilepsy did not need life-long drug treatment in the pre-seminar test, 72.8% maintained the same idea after the seminar ($P < 0.0001$). Although 39.4% of the teachers thought that every person with epileptic seizure(s) had to use an antiepileptic drug, the percentage decreased to 14.3% in the post-seminar ($P < 0.0001$). The percentage of people who knew how to help a patient with epilepsy during the seizure increased from 41.3 to 97.9% after the seminar ($P < 0.0001$) (Table 2).

Employment, driving, and social activities

The participants thought that people with epilepsy could be successful in professions, such as executive secretary, scientist, physician, etc., with the percentage of 82.4 and 93.9% in the pre- and post-seminar tests, respectively ($P < 0.001$).

The teachers acknowledged that children with epilepsy could be successful in ordinary classes with ratios (pre-seminar 93.9%, post-seminar 98.8%) ($P < 0.005$) (Table 2). Although the percentage of teachers who thought the best profession for a person with epilepsy should choose was being a teacher (37.1%) or no professions at all (36.4%), these percentages later changed significantly (81.1 and 18%, respectively) (Table 3).

Questions concerning the eligibility of the people with epilepsy to drive were answered negatively by the majority of the teachers both before and

Table 2 Distribution of the responses to pre- and post-seminar tests.

	Pre-sem			Post-sem			McNemar's test					*P*
	Participants (%)	Yes (%)	No (%)	Participants (%)	Yes (%)	No (%)	Participants (%)	Pre: yes (%), post: yes (%)	Pre: no (%), post: no (%)	Pre: no (%), post: yes (%)	Pre: yes (%), post: no (%)	
Awareness and knowledge												
Have you ever read/heard something about epilepsy?	332 (95.6)	230 (69.3)	102 (30.7)	335 (95.9)	303 (90.4)	32 (9.5)	321 (92.8)	217 (67.6)	25 (7.8)	74 (23.1)	5 (1.5)	***
Do you know a person with epilepsy?	342 (98.8)	203 (59.4)	139 (59.4)	344 (98.8)	209 (60.7)	135 (39.3)	340 (98.3)	185 (54.4)	117 (34.4)	22 (6.5)	16 (4.7)	ns
Have you ever seen someone having a seizure?	324 (93.6)	231 (71.9)	93 (28.1)	339 (93.6)	242 (71.4)	97 (28.6)	319 (92.2)	212 (66.5)	66 (20.7)	25 (7.8)	16 (5.0)	ns
Is epilepsy a contagious disease?	339 (97.9)	8 (2.3)	331 (97.6)	346 (97.9)	14 (4.0)	332 (95.9)	339 (97.9)	2 (0.5)	319 (94.1)	12 (3.5)	6 (1.8)	ns
Is epilepsy a psychological disease?	309 (89.3)	55 (17.8)	254 (82.2)	341 (89.3)	24 (7.0)	317 (92.9)	307 (88.7)	12 (3.9)	246 (80.1)	6 (1.9)	43 (14.0)	***
Do all epileptic patients have the same symptoms?	302 (87.3)	118 (39.1)	184 (60.9)	341 (87.3)	22 (6.5)	319 (93.5)	300 (86.7)	9 (3.0)	174 (58.0)	10 (3.3)	107 (35.7)	***
Is epilepsy a disease that can be treated?	306 (88.5)	246 (80.4)	60 (19.6)	343 (88.5)	334 (97.4)	9 (2.6)	305 (88.2)	242 (79.3)	5 (1.6)	54 (17.7)	4 (1.3)	***
May some seizures end in few seconds without anybody recognizing them?	268 (77.5)	233 (86.9)	35 (13.1)	331 (77.5)	326 (98.5)	5 (1.5)	260 (75.1)	223 (85.8)	0 (0.0)	35 (13.5)	2 (0.8)	***
Attitude												
Do you think it is appropriate for a person with epilepsy to get married?	336 (97.1)	303 (90.2)	33 (98.8)	343 (99.1)	327 (95.3)	16 (4.7)	335 (96.8)	297 (88.7)	9 (2.7)	24 (7.1)	5 (1.5)	*
Do you think it is appropriate for a person with epilepsy to have a child?	320 (92.5)	264 (82.5)	56 (17.5)	337 (97.4)	308 (91.4)	29 (8.6)	312 (90.2)	249 (79.8)	17 (5.5)	36 (11.5)	10 (3.2)	**
Would you marry a person with epilepsy?	298 (86.1)	176 (59.1)	122 (40.9)	320 (92.5)	238 (77.4)	82 (25.6)	285 (82.4)	159 (55.8)	64 (22.5)	50 (17.5)	12 (4.2)	***
Would you approve of your child's sharing activities with a friend with epilepsy?	335 (96.8)	314 (93.7)	21 (6.3)	342 (98.8)	334 (97.7)	8 (2.3)	332 (95.9)	308 (92.8)	5 (1.5)	16 (4.8)	3 (0.9)	**
Would you approve if your son/daughter married a person with epilepsy?	321 (92.8)	84 (26.2)	237 (73.8)	324 (93.6)	79 (24.4)	245 (75.6)	312 (90.2)	31 (9.9)	186 (59.6)	44 (14.1)	51 (16.4)	ns
Do you think a person with epilepsy can live alone?	322 (93.1)	116 (36.0)	206 (64.0)	338 (97.7)	118 (34.9)	220 (65.1)	316 (91.3)	70 (22.1)	164 (51.9)	40 (12.7)	42 (13.3)	ns
Would you offer a job to a person with epilepsy, if you were a boss?	329 (95.1)	284 (86.3)	45 (13.7)	34 (98.3)	332 (97.7)	8 (2.3)	324 (93.6)	28 (86.7)	7 (2.2)	35 (10.8)	1 (0.3)	***
Do you find it acceptable to work with a person with epilepsy (colleague) at work?	341 (98.6)	337 (98.8)	4 (1.2)	344 (99.4)	343 (99.7)	1 (0.03)	339 (97.9)	335 (98.8)	1 (0.3)	3 (0.9)	0 (0.0)	ns
Management												
Are there some people with epilepsy who need life-long drug treatment?	261 (75.4)	174 (66.6)	87 (33.3)	313 (75.4)	85 (27.2)	228 (72.8)	243 (70.2)	57 (23.5)	66 (27.2)	16 (6.6)	104 (42.8)	***
Does every person with epileptic seizure have to use an antiepileptic drug?	218 (63.0)	86 (39.4)	132 (60.5)	315 (91.0)	45 (14.3)	270 (85.7)	204 (58.9)	20 (9.8)	117 (57.4)	7 (3.4)	60 (29.4)	***
May smelling eau de cologne or onion help to end an epileptic seizure?	244 (70.5)	48 (19.7)	196 (80.3)	325 (70.5)	4 (1.2)	321 (98.8)	232 (67.1)	0 (0.0)	83 (78.9)	3 (1.3)	46 (19.8)	***
Do you think it is sensible to hold the arms and legs during a seizure with convulsions?	264 (76.3)	77 (28.8)	187 (70.0)	325 (77.2)	13 (4.0)	312 (96.0)	251 (72.6)	4 (1.6)	171 (68.1)	6 (2.4)	70 (27.9)	***
Do you know how to help a patient with epilepsy during the seizure?	322 (93.1)	133 (41.3)	189 (58.7)	344 (93.1)	337 (97.9)	7 (2.0)	320 (92.5)	129 (40.3)	4 (1.2)	184 (57.5)	3 (0.9)	***
Employment, driving, social activities												
Can a person with epilepsy be successful in some specific professions (executive secretary, physician, scientist) as ordinary people?	290 (83.8)	239 (82.4)	51 (17.6)	333 (96.2)	313 (93.9)	20 (6.1)	282 (81.5)	224 (79.5)	10 (3.5)	39 (13.8)	9 (3.2)	**
Can a child with epilepsy be successful in a normal class?	330 (95.4)	310 (93.9)	20 (6.1)	345 (99.7)	341 (98.8)	4 (1.2)	329 (95.1)	308 (93.6)	2 (0.6)	17 (5.2)	2 (0.6)	*
Should a person with epilepsy drive?	294 (84.9)	32 (10.9)	262 (89.1)	331 (95.7)	29 (8.8)	302 (91.2)	285 (82.4)	4 (4.1)	233 (81.8)	21 (7.4)	27 (9.1)	ns
Do you think they should not often participate in social activities? (Because the patients with epilepsy are always at the risk of having seizures)	301 (86.9)	275 (91.4)	26 (8.6)	321 (92.8)	300 (93.5)	21 (6.5)	284 (82.1)	247 (86.9)	4 (1.4)	20 (7.1)	13 (4.6)	ns
Is it necessary for a student with epilepsy to be prevented from participating in sports activities?	301(86.9)	20 (6.6)	281 (93.4)	319 (92.2)	19 (5.9)	300 (94.1)	281 (81.2)	3 (1.1)	249 (88.6)	13 (4.6)	16 (5.7)	ns

P-value: Pre-sem: pre-seminar, Post-sem: post-seminar; (*) $P < 0.005$, (**) $P < 0.001$, (***) $P < 0.0001$; ns: non-significant, $P > 0.05$.

Table 3 Results of the multiple choice questions.

	Pre-seminar participants (%)	Post-seminar participants (%)
Awareness, knowledge, and management		
According to your opinion, which of the following illnesses is the worst one?	$n = 321$ (92.8)	$n = 335$ (96.8)
(a) Asthma	16 (5.00)	11 (3.3)
(b) Cardiovascular disease	73 (22.7)	75 (22.4)
(c) Epilepsy	15 (4.7)	8 (2.4)
(d) All of them	140 (43.6)	94 (28.1)
(e) None of them	77 (24.0)	147 (43.9)
Attitude of epilepsy		
If you had epilepsy would you tell it to	$n = 329$ (95.1)	$n = 343$ (99.1)
(a) Any person	256 (77.8)	319 (93.0)
(b) Only to your husband/wife	40 (12.2)	12 (3.5)
(c) Your relatives	25 (7.6)	10 (2.9)
(d) Your friends	2 (0.6)	1 (0.3)
(e) Nobody	6 (1.8)	1 (0.3)
Employment, driving, social activities		
Which profession do you think an epileptic person should prefer? Being a	$n = 294$ (84.9)	$n = 344$ (99.4)
(a) Soldier	6 (2.0)	0 (0.0)
(b) Police (wo)man	2 (0.7)	0 (0.0)
(c) Teacher	109 (37.1)	279 (81.1)
(d) Driver	2 (0.7)	0 (0.0)
(e) All of the above	68 (23.1)	3 (0.9)
(f) None of the above	107 (36.4)	62 (18.0)

after the seminars (pre-seminar 89.1%, post-seminar 91.2%).

Unfortunately, the majority of the teachers who believe that people with epilepsy should not participate in social activities was high in the pre-seminar test but decreased relatively in the post-seminar test. Only 6.6% of the teachers thought it was necessary for a student with epilepsy to be prevented from participating in the sportive activities and this percentage decreased to 5.9 after the seminar ($P > 0.05$) (Table 2).

Discussion

The quality of life of school children with epilepsy may seriously be affected by the attitudes of their families and school environment if the people around them are unaware of or uneducated about their condition. This fact renders the children with epilepsy helpless, fragile, and unconfident. Children having seizures may disturb their teachers, who do not receive specific training about epilepsy during their education. Moreover, the teachers may feel desperate not knowing how to handle the situation. It thus, seemed apt to organize a seminar to educate school teachers on epilepsy.

We observed that most of them answered the questions about knowledge and awareness regarding epilepsy rightly. A majority of the teachers knew that people with epilepsy could have minor seizures and that epilepsy was a mostly treatable disease in the pre-seminar. Thus, this result reveals that teachers who were really interested in epilepsy attended in the seminars. Despite the presence of evidence on sudden unexpected death in epilepsy (SUDEP), teachers were not instructed on such cases because of the quite low rate of SUDEP in children (0.2%)[11] and because it was one of the objectives of the seminar to improve the positive attitude toward children with epilepsy and management of seizures.

In the seminars we observed that the responses to the questions varied according to gender, marital status, having children. Although some of the participants approved of marrying a person with epilepsy, they disproved their children marrying one. With respect to gender, perhaps due to motherly instincts female participants gave positive responses concerning marrying and employing a person with epilepsy.

Negative attitudes toward any patient are considered disrespectful in our country. The causes for the tendency to not allowing a patient with epilepsy to live alone or participate in certain social activities

might be overprotection, which can be found among Turkish customs. A similar overprotection can be seen in certain countries in literature.[12,13]

In a study among school teachers in Thailand 15.1% of the teachers preferred students with epilepsy to be placed in special classrooms and 9.8% wanted them to be cured and controlled before returning to their classrooms.[8] In another study from Brazil 93—95% of the teachers did not object to having a student with epilepsy in class.[7] In our study while 93% of the teachers accepted having a student with epilepsy in class in the pre-seminar test, this percentage increased to 98.8 in the post-seminar test.

After getting the results of the post-seminar test, we observed that almost all of the participants learnt how to help a patient with epilepsy during seizure. Moreover, wrong managements were improved. They also agreed that epileptics could be successful in certain professions except the risky ones. The over protectionist attitude of Turkish society toward any patient is also discernible in the responses given to the question relating to social activities.

Conclusions

This study, conducted in Istanbul, was the first Turkish survey of teachers' attitudes toward epilepsy. In general, negative attitudes were rarely seen. The reason for this rarity might be that our participants were all university or college graduates and were well informed by written and visual media on the subject. Additionally, they might have felt the need to learn more about epilepsy due to their personal familiarity with the disease.

In the near future it is our aim to apply the same test to the same teachers to check the permanency of the information received in the seminar.

It is not enough, however, to educate only the teachers to better the conditions of children with epilepsy. There is still the need to educate the family members and school friends of these children. Improving the awareness, knowledge, attitude and management of epilepsy, as well as people's opinions about epileptics' employment, driving and social activities is an important problem that requires further attention in Turkey.

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